JT-3195-US

REVERSE GATE FOR WATER JET PROPULSION SYSTEM

ABSTRACT OF THE DISCLOSURE

A non-steerable reverse gate having a structure which reverses the lateral flow component when the steering nozzle is turned. The reverse gate produces high reverse and steering thrusts, while requiring low operating loads. The steering response in reverse is the same as an outboard or inboard/outboard. In effect, the transom thrusts to the side that the steering wheel is turned to. The reverse gate has a pair of flow-reversing passages for providing reverse thrust, a lateral steering passage for producing a lateral thrust when the steering nozzle is turned, and a fixed or pivotable central deflector body. The deflector body has three vertical walls connected to a juncture. One vertical wall is straight and extends forward of the juncture. The other vertical walls are curved and extend rearward and laterally outward from the juncture on opposite sides of a plane of symmetry. Each curved vertical wall has a flow-deflecting surface which is concave and faces a front opening of the reverse gate. The straight vertical wall splits the incoming flow into two streams, while the flow-deflecting surfaces divert portions of the respective streams toward the respective flow-reversing passages. Steering in reverse is provided by water which flow around the deflector body and out a discharge opening of the lateral steering passage.